

COOP'S TECHNOLOGY DIGEST

-A Timely Report On The World Of Communications-

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NEXT ISSUE DATE: APRIL 1, 1998

COOP'S TECHNOLOGY DIGEST / SUBSCRIPTION INFO

There are ten (10) issues per year on a schedule dictated by industry events. The readership includes telecommunication industry consultants, broadcasters/telecasters, brown goods importers, retail stockists, installation and maintenance firm personnel, educators, regulatory agencies, business investors and Arthur C. Clarke. All copies sent via airmail / Fast Post. Annual subscription NZ\$250 per year within New Zealand, US\$250 per year outside. In Australia, CTD is represented exclusively by AV-COMM Pty Ltd, PO Box 225,

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COOP'S TECHNOLOGY DIGEST

March 4, 1998 ♦ VOLUME 98-02-45

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BAILING OUT OF CABLE in NEW ZEALAND

The New Zealand cable television industry, robust with enthusiasm and multi-hundred million dollar plans and expenditures only 12 months ago, has gone into a "sell it out, clear the warehouses" phase. With the surprise announcement by Telecom's First Media (cable TV) unit last November they were shutting down their cable TV construction (CTD 97-10, p. 8, 17), subsequent announcements by Telecom's major stockholders (Bell Atlantic, Americom) they were selling out their controlling interests in (NZ) Telecom were less of a surprise. The American telephone companies moved into New Zealand in the wake of privatisation of the government telephone company monopoly sell off, stayed nearly a decade and now several billion dollars richer, are ready to move on to more rewarding business opportunities.

In making their "We quit cable TV" announcement on November 14th, Telecom claimed it had invested "more than (NZ) \$70 million in the cable TV construction" project to date which it said passes 65,000 homes (Auckland and Wellington). Although this announcement came prior to release of plans by Bell Atlantic and Americom to sell off their NZ Telecom shares, the financial community generally was supportive of Telecom's decision to shut down First Media. The closure announcement was released only hours before the end of a work week and became effective immediately. Dozens of contractors were left with no work and virtually no warning stranding cable burial equipment and open trenches throughout Auckland suburbs (CTD 97-10, p. 17).

As might be expected, with no advance warning a not insignificant amount of material was in the pipeline and in warehouses maintained for the First Media project by prime contractor Ericsson Communications Ltd. For most of December Ericsson scrambled to close open trenches, place unconnected cable stubs into housings (as a safety precaution, even if no equipment was going to be installed there) and collect materials assigned to subcontractors for ongoing construction. One New Zealand firm contacted by CTD claimed it had brought into the country 25 pieces of heavy machinery for trenching and boring streets with a combined value in excess of \$1 million; equipment for which, without notice, there was suddenly no work and no revenue being earned.

By mid-January Ericsson had collected previously in field reels of cable, hardware, cable electronic modules and support equipment to a major company warehouse located in Napier. And now the sell off begins. The complete list of hardware and electronics fills nearly 9 pages of paper with tiny print and comes to a "Total base cost of stock on hand" of NZ\$8,896,674, in Napier (1). There is an additional \$3,723,267 held at First Media warehouses, primarily in-home cable set-top converters, modems and the smaller diameter (RG6, RG11) coaxial cable used for connecting individual homes to the master lines at the street.

Ericsson wants the equipment out of their Napier warehouse and a sale is underway. The unsold stock as of March 20th will be transferred to Telecom warehouses.

Some of the individual item quantities are staggering.

- √ 222,767 metres of 6 through 96 fibre (optic) cable
- √ 23,367 aluminium plates to fasten subscriber taps to overhead messenger strand wire
- √ 261,021 metres of .585 aerial coaxial cable

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FIRST chance to register interest for SPRSCS '99!

- ✓ 77,260 metres of .840 aerial coaxial cable
- ✓ 184,375 metres of .565 underground (to go in conduit) coaxial cable
- ✓ 91,002 metres of .840 underground coaxial cable
- ✓ 17,200 2, 4 and 8 way customer subscriber taps (sufficient to service no less than 68,800 homes)
- ✓ 191 C-COR brand cable television line amplifiers (if the quantity is not impressive, the \$438,000 "cost" figure may be)

There are more than 16,000 subscriber decoder / set-top tuners which did not make it into cable homes (First Media has never revealed the number of subscribers actually paying for cable TV but the provider of a Mandarin language service within the cable service told CTD his special interest subscribers account for "more than 80% of the present revenues of First Media"). Model numbers and First Media "cost" includes: STU-CFT2200 (7,800 units at \$290.93), ICFT2000 with (NZ) UHF output (1,000 units at \$106.68) and ICFT2000 with combiner (6,655 units at \$141.17).

Some perspective. The total amount of the on-hand fibre optic and coaxial cables is more than 1,000 kilometres; a supply equivalent to stretching a cable from Invercargill to Cape Reinga. In the larger .565 and .840 coaxial cables, 40 container loads each 20 feet in length.

The future of this sizeable inventory? A source interviewed by CTD told us, "Telecom presently plans to continue operating the existing coaxial cable (and fibre optic) plant as installed for ten years; then if the market conditions have not changed, it will simply be turned off." Why ten years? Doubtless to satisfy a taxation depreciation schedule that will allow Telecom to recoup the present investment over a period of years.

Will spares be kept to deal with maintenance on the operating sections of "cable TV" during the ten year period? According to Ericsson, "Spares have already been inventoried out of the original quantities and all of the items on the (9 page) list are surplus to their needs."

Pricing

One would expect that when cable television equipment was purchased in such large quantities, the prices paid per item would be about as low as they might go on the world market. "Base cost per unit" is shown in the nine page list, which may or may not reflect the actual cost to Telecom. There are some surprises.

- ✓ Fibre optic cable varies from \$17.75 per metre (96 fibre) to \$2.27 p/m (6 fibre)
- ✓ 7" (diameter) by 9" (height) green equipment pedestals range from \$45.44 to \$47.01 while 7" round equipment pedestals are \$37.70

[Note: This is approximately the same price paid for the same units in very small quantities (48 in a single order) by smaller, regional cable systems.]

- ✓ Times Fibre TX10840JB coaxial cable is carried at \$2.61 per metre while TX10565JB is \$1.36 per metre

[Note: Recent pricing for "surplus" .540 cable has been in the range of \$1.75 per metre while brand new .500 cable from Auckland based Maser Technology has been in the region of \$2.30 per metre.]

- ✓ 4-way customer taps, carrying the General Instrument (NextLevel) brand are listed at \$19.04 each

[Note: Similar quality Taiwan sourced identical specification taps can be purchased for under (NZ) \$10 each suggesting Telecom by buying an American name-brand product paid approximately 50% too much for each tap. This becomes important when they have \$351,829 in taps in inventory; a 'premium' of nearly \$169,000 paid for a "brand name.")

✓ There are some interesting imbalances in the inventory. For example, 10 cable television plant power supplies (\$588.24 each) and 184 "power inserters" (\$38.09 each). In a cable television system design, there is one power inserter for each power supply which means Telecom is carrying 18.4 power inserters for each power supply in stock.

1) For a copy of the 9 page list of "surplus to needs" cable television equipment currently being sold, contact Mark Harrison at Ericsson in Napier; telephone (64)-[0]6-831-0200, extension 6874 (fax (64) [0]6-831-0277. (email enz.enzmsh@mesmtpse.ericsson.se)

✓ Some of the costs involved with utilising fibre optic main lines are apparent beyond the \$17.75 per metre cost of 96 fibre cable. For example, a 1310 (nm) 9 dBm laser transmitter is \$22,472 (three are in stock) while an EML external modulator network is \$83,994 (two in stock).

✓ If you have ever wondered what Telecom pays for that mint green duct which you see them using all over the country to bury cables, the answer is \$0.81 per metre for 32mm, \$1.07 p/m for the 40mm diameter and \$1.50 p/m for 50mm. And the giant 100mm size? \$4.28 p/m. The black duct in 32mm size is \$0.75 p/m while the orange electrical duct costs them \$1.63 p/m.

✓ The suggestion that First Media was not very heavily into actually hooking up homes to their able system is found in the quantity 3 CablePro RG6 style crimpers for "F" fittings (every drop run into a house must have "F" fittings affixed and they can only be attached with a CablePro tool [the cost to them for this tool is \$124.65]). Each cable installer requires at least one such tool and three tools suggests not very many installers were at work. A installer should do 3 to 4 maximum home drops per work day, or on average 17 per week. Three crews could do 54 per week, 232 per month and as First Media was connecting up homes for not more than ten months total time - well, you can figure out the maximum number of subscribers they attracted just by simple maths applied to the number of cable crimping tools they purchased(!).

✓ Nobody "marks" cables and connections better than the telephone company. For First Media, they had purchased Scotchlite (brand) stick on numbers and letters. Of the approximately 10,000 such peel and stick letters and numbers in inventory, 5,084 are the number "0" (numbers 1 - 0, letters A - Y with 8 letters not in inventory).

✓ Those in the electrical business may be interested in the 34,918 metres of 6mmSQ earth wire at approximately \$1 per metre.

✓ Smaller diameter "drop" cable (used to run from street side main or feeder lines into the home) are available in 8 varieties of RG6 and RG11 ranging from \$0.13 per metre ("Lifetime single drop RG6 Quad") to \$0.64 per metre (RG11 Quadshield flooded PVC-Black). There is more than 100,000 feet of white RG6 quadshield (\$0.37 per metre).

[Note: Comparable prices at distribution firms such as Maser Technology Group range upwards by 35 to 50% from the prices shown in the First Media surplus list. If all of the drop cable (RG6 and RG11) now offered as surplus by Ericsson ends up being "dumped" in New Zealand, local prices for six to twelve months are likely to be considerably depressed at the normal distribution outlets.]

MEANWHILE - The Bank Shuts Down Taupo CableVision Inc Limited

On a (much) smaller scale, the assets of TCI (Taupo) are on the block and are attracting modest interest in a market where "buys" in "cable TV surplus" are likely to become legendary shortly. TCI's bank (BNZ) served notice of default on the firm early in December and appointed Coopers and Lybrand (Auckland) to handle the sale of the assets. When the system shut down on February 14th, it had fewer than 200 cable TV subscribers with approximately 20 channels of service in a market where Sky TV operates with their full package of (5) channels.

Managing Director Ron Theaker, a Canadian with decades of cable television experience, claims "over \$2.2 million in assets has been assembled to build out the HFC (hybrid fibre plus coaxial cable) network to approximately 50% of the community." The system is 90% above ground (on power company poles) and the balance is buried. Theaker's original plan was to bury virtually the entire plant and he imported boring/thrusting and trenching equipment for this purpose. Permits to bury the system were stalled (Theaker says "blocked") at the local level and ultimately Theaker was forced (he says) "to bite the bullet and accept the less than advantageous terms offered by the power company to rent pole space from them." Within the liabilities facing the now Bank closed system is approximately \$20,000 in unpaid pole rental fees owed to the power company. The system began operations in January 1997.

Theaker's approach to system design was modern and state of the art, employing fibre optic trunking to reach node points where service was converted to coaxial cable for the final legs to residential streets and the homes. With several decades of cable experience in Canada, he had searched throughout North

America for cable, amplifiers and other equipment to build the system finding most of what is now in warehousing in Taupo at below market costs. His claim of (NZ)\$2.2 million in assets must be tempered by his *actual* cost of equipment acquisition which could be significantly lower than this. In fact, Theaker was a master at locating unused, reasonably high quality equipment in the world cable TV hardware marketplace and bringing the hardware to New Zealand at costs lower than Telecom's First Media (for example) paid for similar equipment.


Ultimately, Theaker required operating cash to carry his business beyond the initial start-up phase as well as additional funding to pay for the labour content of building the system out to cover the complete Taupo market. His attempts to locate funding, either in New Zealand or offshore, failed. Funding efforts were made more complicated by Sky's decision to establish UHF transmitting facilities to serve Taupo within months of TCI's announcement that it would build cable TV in the community, and by TCI's failure to locate appropriate replacement programming for the not-available to him Sky channels. Attempts by Theaker and Sky to reach a contract agreement (such as exists between Sky and Gisborne, Greymouth and Doubtless Bay systems) stalled when Theaker demanded substantial changes in the Sky contract form and Sky would not accommodate his requests. The system's less than 200 subscribers were on average paying around \$20 per month for service which did not include full-time sport or movie channels.

Coopers and Lybrand first established a late January cut-off date by which anyone interested in purchasing the complete system as an operating entity was to have a bid registered. There was no real interest in this and the project moved to the identifying of individual component parts within the system which could be sold to recoup the loan from BNZ. The exact amount owed to the bank has not been revealed but is believed to be in the region of (NZ)\$550,000. Theaker advised CTD he believes "US\$950,000 would pick up the complete system as it stands now." The dollar difference between the two numbers would come from unused inventory of cable, electronics and hardware, the value of vehicles (there were 17 listed in the original inventory circulated), and the real estate (TCI purchased property in an industrial region of Taupo and created a purpose-built office and workshop including its headend and dish farm facility). March 12th is currently the "wrap it all up" date.

By late in February it was increasingly clear that very little of the electronics in inventory or actually in operation in the cable plant was attracting serious buyer interest from New Zealand. Theaker was indicating, "Unless indicated (on the inventory list), the assets are all in reasonably new (12 months) condition. New indicates unused and probably still in boxes. There may be cause to ship equipment to Long Beach, Seattle or Vancouver." The largest single dollar value inventory item is approximately 65,000 metres of CommScope QR540 JCA jacketed coaxial cable (in the North American parlance, 2,800 feet per roll with 76 rolls). Inventory sheets prepared by TCI for Coopers and Lybrand describe this cable as "new" but in fact "unused" might be more appropriate as virtually all of this cable has been stored on wooden and fibreboard outdoor spools long enough that some roll structural problems are apparent. Theaker's personal view of the "value" of this coaxial cable is in the range of (NZ)\$1.75 per metre which would become an asset value of (NZ)\$113,449.

A comparison to the Times Fibre TX10565JB held in stock at Ericsson for First Media (535,907 metres) carried on Telecom books at "costs" as low as [NZ]\$1.36 per metre) is inevitable. The primary technical advantage to the CommScope cable held by TCI is its ease of handling and use (it is a far more flexible cable than the Times Fibre) whereas the primary advantage to the Times Fibre is the price and the slightly lower cable loss (more efficient cable) for the .565 versus the .540.

The TCI "surplus" includes a complete cable television headend (satellite dishes from 10m to 4.6m in size, satellite analogue and digital receivers, headend signal generation and mixing equipment) which the First Media surplus does not include. Additionally, TCI has test equipment, low cost cable (set top) converters, some computer equipment (TCI generated locally three channels of text messages), and even road work signs to comply with safety regulations. The TCI equipment is suitable for creation of one or



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more complete cable television systems although the equipment already installed (and operational) for the existing service lines will have to be dismantled and taken away on a part by part basis.

Coopers and Lybrand is responsible for the sell off of TCI assets but system founder Ron Theaker remains on board to assist in this operation (2). Theaker's interest is to secure as much money as possible for the component parts in the system since he will be entitled to funds received which go beyond the amounts claimed by the bank and other creditors.

Despite the closing down of the Taupo system, Theaker remains bullish on the viability of cable television in New Zealand and hopes to pursue new cable projects here. He believes his major errors were as follows:

1) Allowing the plant construction to begin before local permits to bury the complete system were completed, the result of his concern that he could tolerate no more delays (he waited more than 6 months for the permits which ultimately never came) in the face of Sky's rushing of UHF terrestrial pay TV service to Taupo;

2) Not arranging for more programming in advance of going into operation, now confident that he could have brought taped programming into New Zealand from North America which would have made his system more viable against the Sky competition (3).

SMALLER Cable in Australia Also in Trouble?

Northgate Communications, which says it passes 2,200 homes in Ballarat (Victoria) is attempting to exit from the cable TV business. The firm reportedly has 150 subscribers on the all above ground (aerial) plant. Northgate believes it has found a better business opportunity in the cable telephony world. It has created its own "switches" which are installed at Ballarat, Melbourne, Sydney, Brisbane, Adelaide, Perth, Auckland, Los Angeles, London, Frankfurt and Hong Kong. Their reported investment at this stage is (A)\$4 million which translates to \$216,667 per cable subscriber; certainly one of the higher costs of service in the industry. More importantly, with 2,200 homes passed they have (A)\$1,818 per home passed invested which does not compare favourably with New Zealand's First Media claim of NZ\$1.077 per home passed. In their telephony business, they have been offering Australian untimed calls (i.e., no time limit) at A\$0.95 and elsewhere in the world at A\$4.95. If Northgate is really in the telephone business rather than cable television, their A\$1,818 per home passed is closer to telephone industry "cost standards" than it would be as a cable only service. In an unrelated bit of bad news, Langley Communications which held a contract to install cable TV in Gosford (NSW) has closed down and is in receivership.

The Sorry Status of Australian M/MDS

If cable is wounded on both sides of the Tasman, pay TV providers utilising MDS/MMDS microwave delivery technology in Australia have their own serious problem; piracy. MDS was chosen by Galaxy, East Coast Television and others as a low-cost way of reaching subscriber homes without the expense and hassles of cabling the community. CTD looked at the technology behind MDS in our February 1995 issue (95-2-15) and pointed out at that time that MDS was really nothing more than UHF television transmitting at higher frequencies. MDS is received with outdoor, rooftop aerials, and a frequency down

2/ Taupo CableVision Inc. Limited in receivership can be reached at tel (64)[0]7-377-4800, fax (64) (0)7-377-0025 and email cabletv@reap.org.nz

3/ In fact, two Australian cable TV systems outside of the main Foxtel and Optus networks are now importing tape delayed programming from North America which includes independent US TV stations (i.e., KTLA Los Angeles for example), narrow interest sport (i.e., Speedvision which is an auto and truck racing channel service), as well as family entertainment and movie channels. The programming is recorded on 8 hour VHS tape, the tapes shipped in two week sets, received and played by the Australian systems and then sent in daisy chain fashion to other cable networks throughout the South Pacific. This service has just now begun, is operated as a cable TV system co-operative, with each system sharing a prorated segment of the costs. Unfortunately for Theaker, it was not functional one year ago when he could have benefited from it.

converter box mounts at the aerial so that the microwave frequency band signals are then carried into the home at TV channel frequencies which are compatible with a normal TV set's tuning range.

Therein rests the problem. If the MDS operator elects to not encrypt the MDS transmissions, relying upon the transmission frequency (not receivable without a down converter box) as "security," there is an instant market for these down converter ("MDS decoder") boxes in the grey or black market. And if the MDS transmission is somewhat secured (encrypted)? There is still a grey market although the "MDS decoder" boxes become more expensive.

Case history. East Coast Television serves the regions east of Sydney in New South Wales with a combination of MDS and satellite. East Coast MDS transmitters are on hilltops, and there are significant shadow areas (regions which do not receive the MDS service). Their answer in the past has been to install satellite equipment for these homes, but MDS equipment for homes where the MDS signal is available.

Unfortunately, East Coast has fallen on tough financial times and there is a cost of (A)\$1,200 for the equipment necessary to install a home satellite dish system. Where a home can be served by MDS, East Coast's cost is closer to (A)\$500 per home for the equipment. In neither case will they recover their actual cost for the equipment required to bring a new subscriber on line but in the case of the satellite system, they are \$700 further in the hole than with an MDS system. Accordingly, East Coast has for some months simply refused to install any new satellite (DTH) subscribers. They continue to install MDS subscribers because of an inventory in MDS receiving equipment previously purchased by the firm.

The public attitude towards East Coast is not good and where people might not have previously been attracted to "grey market" MDS decoders, now there is a rapidly growing grey market for the product. Here are the numbers. There are three brands of MDS "decoder" coming out of Taiwan; two of these are manufactured in one plant (but name branded differently), one is done in a second plant. The units have an outdoor down converter, an indoor power supply and control system with a hand held remote control. They are landed from Taiwan for between A\$225 and \$275 per unit. And there are problems. Depending upon the brand and model, the out-of-box failure rate is as much as 50% (and to date not better than 20%). The "rule of thumb" in the grey market trade is (1) test each unit before taking it out for installation, (2) let those that pass the first test continue operating over night, and, (3) if it is still running the next morning it has a 4-1 chance of making it to 30 days. And if it goes to 30 days without fault, it is a good one (which works out to approximately 1 unit out of 3 of those received from Taiwan). There is a brisk business for international shippers here; one installation firm manager interviewed by CTD told us, "We have at any moment approximately 60% of our inventory dollars in this product tied up on a box that is heading for Taiwan for repairs, is in Taiwan being repaired, or is on its way back."

What the public currently pays is around A\$780 for the "decoder" equipment plus a MDS aerial installed on their home. The installer hopes to make \$200 on the job, the distributor who has to battle with the defective boxes also hopes to make \$200 when all is said and done.

The loser here is East Coast Television (although similar practices are happening throughout Australia wherever there is MDS operating). They lose the subscription income from the MDS viewer who has paid slightly more than a year's subscription fees to own his own MDS grey market system. The viewer only "comes out" after approximately the 16th month of having the grey market unit installed.

How significant is this practice? Three sources located by CTD all claimed, "We try to keep a low profile because if this becomes too extensive, East Coast might further secure the transmissions." How many grey market decoders have been sold to date? Australia wide the number is believed to be under 10,000 but most certainly more than 5,000. As a percentage of the entire pay TV universe in Australia, it would be under 1% of the total. But for some geographic regions it could be approaching 5%.

One example is Brisbane where the MDS system will officially close down in mid-March. There are reportedly no more than 300 paying subscribers to the Brisbane MDS service at this time and each has been offered a swap out of a DTH receiving system in place of their MDS system. The MDS subscribers are not being asked to pay for the equipment trade out, but there will be a monthly increase in service

cost of approximately \$15 with DTH. The Brisbane MDS operator, Australis, admits that MDS has been a failure in this marketplace and grey market boxes are at least partially to blame. Those who have purchased grey market product there will simply be left without service, in most cases long before they have used the equipment to the financial break-even point of 16 months.

Australia's HACBSS Conversion Still Clouded

CTD for January (see "The Saga of Satellite IRDs," p. 14-17) reported on the very uncertain future of converting existing B-MAC format regional "outback" television services to digital format. We noted a particular bit of aggression in Western Australia where HACBSS telecaster GWN has elected to utilise the non-Australian carrier PanAmSat, and with it the Scientific Atlanta PowerVu deviate of MPEG-2, rather than signing on with the Optus created "Aurora" service. A number of press releases and letters have been leaked by Optus to both the trade and general press as Optus responds to the loss of business to PanAmSat and tries to isolate GWN as an adventuresome maverick rather than a trend away from Optus.

Five weeks down the road from our last report, the following events are conspiring to perhaps further complicate the situation.

1) GWN's existing B-MAC transmission, using the Optus satellite as it has for nearly ten years, was scheduled to terminate (at GWN's request) February 28th. GWN with the assistance of PanAmSat and Scientific Atlanta have done their best to notify every existing user of the B-MAC service with an advisory that as the B-MAC service was to terminate, no time should be lost in replacing the B-MAC decoder with a new Scientific Atlanta PowerVu IRD (model D9234 has been assigned to this service).

Optus has responded by notifying GWN viewers that *contrary* to GWN statements, the B-MAC service would *not* stop February 28th and suggesting that GWN B-MAC viewers "hold off until midyear before making a conversion decision." The actual number of B-MAC users who have replaced with PowerVu (and in the process, have repositioned their dishes to PanAmSat) is not known but sources at GWN suggest no more than 30% of the B-MAC universe had done so by February 20th. Warehousing established by Scientific Atlanta throughout Western Australia to stock D9234 units for this transition remain basically filled with stock according to reports from distributors contacted by our sister publication SatFACTS. (Individual distributors and dealers were fearful of retaliation from GWN and Scientific Atlanta if they spoke "for the record" and were promised confidentiality as a condition to giving us the status of the D9234 units in their areas.)

The play here is self evident but the reasons for it are not. We will try to unravel what is happening for you.

2) The GWN PowerVu service has been operational and accepting new viewers since December. The process is as follows:

a) An existing GWN B-MAC viewer elects to "trade in" his B-MAC unit for a PowerVu unit. The nearest dealer (which may be several hundred Ks away in WA) arranges a D9234 and either ships it or takes it to the viewer's location. The viewer as a previously registered B-MAC GWN user has an Australian Government \$750 'chit' which when turned in along with the old B-MAC unit reduces the cost of the D9234 to under \$400. Further discounts were also available in January for "early adopters."

b) The dish is realigned from Optus to PanAmSat, the D9234 installed, and the user telephones the GWN control centre to have his unit switched on. The control centre takes down the essential information (name, location and telephone number of viewer, D9234 unique identifier/addressing numbers) and hangs up. They call the would-be viewer back after checking their records and instruct in the sequence required for authorisation of the decoder. By calling the viewer back, the GWN centre is able (by verifying the exact location of the telephone against the reported location of the viewer) to satisfy themselves the receiver is where it is supposed to be; at least at the moment of turn on.

There is a reason for this double-check. GWN carries programming which is not authorised for viewing outside of WA, and if a decoder were to be located someplace else, GWN would be in violation of its programme contract copyright agreements. And while call diversion techniques might trick GWN control

into believing the decoder was in WA when it was really in, say SA, this is less likely than one might suspect.

3) If Optus and their competitive to PAS-2 PowerVu service (which is offered in partnership with Optus competitor Telstra) has a weakness, it is that Telstra + PanAmSat + Scientific Atlanta are *operational* with their version of HACBSS ... and, the Optus Aurora package is not yet operational. Sister publication SatFACTS in the January (19) issue detailed the December announced Aurora roll-out programme. Unfortunately for Optus, the Aurora schedule has already slipped significantly and may be as much as 60 days behind the December schedule by early March. Here are the reasons.

a) The Aurora digital package is basically MPEG-2, but Optus has chosen an uplink multiplex (software) provider that operates their digital data stream in a slightly unique manner. This means that off-the-shelf DVB compliant MPEG-2 receivers will not function *properly* with the Aurora transmissions unless they have been software modified to the new Aurora digital data stream parameters.

b) The Aurora project elected to utilise the Irdeto conditional access package. Irdeto is the same encryption system used by the troubled Australian DTH provider Australis/Galaxy. Irdeto requires a "smart card" to be inserted into a card slot built into the receiver proper and the smart card is the final link in the customer's viewing choice package. Optus believes utilising Irdeto is key to the ultimate success of Aurora because they envision the day when not only will the HACBSS viewer be watching services such as GWN, (the Australian) ABC and SBS on their dish, but the same dish system may also offer them either the existing Galaxy services or perhaps an Optus created DTH service as well.

The PowerVu system is *totally* incompatible with Irdeto. It not only does not use Irdeto conditional access, it also does not (presently) utilise a smart card as a part of their authorisation routine (which is a unique to Scientific Atlanta conditional access system).

c) Alas, from the launch of Australis/Galaxy using Irdeto themselves in 1995 to the present level of Irdeto, several generations of Irdeto have passed under the bridge. In fact, Irdeto (software) version 3.5 was released to anxiously waiting receiver designers officially only on February 24th. It was to be Irdeto version 3.5 which Aurora would be based upon.

It is no surprise, then, that Aurora is 60 days behind schedule today (and probably even more behind schedule by June 1st). *Because* the Irdeto version 3.5 was released by the firm very late in February, it would be impossible for any receiver manufacturer to incorporate this latest (and Aurora specified) version of Irdeto into receivers which they might have delivered back in January.

d) In fact, the Irdeto version 3.5 software must (*after* February 24th) be incorporated into prototype receivers created by would-be suitors to Optus for the Aurora project. There have been four serious efforts, by as many receiver manufacturers, to sell Aurora their receiver as a "standard" for the new digital service. At least two of these firms, South African based UEC (way back several years ago their origins were called Panasat) and San Diego / Wales based Comstream (1) began final preparation of their prototype receivers sometime shortly after February 24th because on March 9th both firms will have their prototypes hand carried into an Irdeto laboratory where "certification" will begin.

March 9th is "C" day - two software engineers from UEC and a contingent (three) from Comstream arrive at the Dutch Irdeto headquarters prepared to have their handiwork approved.

e) As SatFACTS for February 15th reported in some detail, a firm such as UEC (or Comstream) cannot build Irdeto equipped receivers until the final design of the receivers has been approved by Irdeto. This "certification process" is a requirement of being an Irdeto licensee. With the new version 3.5 software barely two weeks old incorporated into their prototypes, it will be a nervous period (up to three weeks) for both UEC and Comstream.

There are only limited possibilities for the outcome. *Both* will gain approval, *one* will gain approval, or *neither* will pass. If both obtain certification, then it will be a race to see which firm can actually

1/ To further confuse you, if Comstream receivers are approved, they will be sold in Australia under the *Panasonic* brand name although produced by Comstream under a license in their Wales (UK) plant.

in quantity the receivers required for the Aurora project. If only one passes muster, Optus will be "all over" that firm to speed up shipment of the first receivers because Optus is fighting its own battle with Telstra + PanAmSat + Scientific Atlanta to put down the "PowerVu wars" that began in Western Australia and threaten to spread east with every additional day Optus is unable to deliver a working HACBSS digital service. If neither UEC nor Comstream are certified during the March tests, there will be further long days at both firm's R and D labs to fix the receiver problems which denied them Irdeto certification.

Optus is caught in the middle between a growing belief in Australia that the Aurora project will be very-very (very) late in starting and the reality that if the Aurora project kicks off with *flawed* receivers the project could crash and burn shortly anyhow because of technical problems with the receivers. PanAmSat and Scientific Atlanta are sitting on the sidelines anxious to capitalise on whatever failures as might occur in the Irdeto certification process and their perception that even if one or both receivers do pass at Irdeto, neither UEC nor Comstream can deliver trouble free Irdeto version 3.5 receivers to the Australian marketplace quickly enough to save the Aurora project.

At the February Australian Satellite & Cable Show, Scientific Atlanta was quietly fanning the fires of discontent (and disbelief) which surround the Aurora project. Using a low key, soft voice, "*let me tell you in great confidence what is really happening with the HACBSS project,*" personnel from SA and PanAmSat used the Sydney gathering to suggest ABC and SBS would, ultimately, not back the Aurora project.

f) And that is a further complication for Optus. Their primary tactic to date has been to characterise the GWN defection to PanAmSat as an isolated situation involving a "maverick" broadcaster. Their first response to queries about GWN and the status of Aurora is to trot out a long list of firms that have signed up for the Aurora project; ABC and SBS always start that list.

Skilfully, deliberately, Scientific Atlanta has been taking every opportunity at high levels to suggest to ABC, SBS and others that the Aurora launch delays are not only not over but will become much longer. SA also takes these opportunities to remind ABC, SBS et al that while Optus is smitten with a conditional access technique (Irdeto) that requires issuance of a plastic smart card to every authorised viewer location, *their system* is "card free" and the entire universe of receivers in the system can be updated, modified as to authorisation streams, and addressed one at a time if necessary by remote control at the master uplink.

SA is also *speculating* that by missing their announced start dates for Aurora, perhaps "Optus is in violation of its contract terms with ABC and SBS and can cancel the five year contracts without Optus permission." (See Optus response to this on p. 12)

After the March 9th Certification

If either Comstream or UEC, or both, (or a darkhorse contender) manage to get past the Irdeto certification testing in Holland (the tests could require several weeks and the results, although urgently sought, will be weeks in being finalised), then the pressure begins to convert the prototype approved unit into sufficient receivers to get the Aurora project finally into operation. There is much to be done and in the best scenario being painted, the internal-to-Optus June 1st "soft launch" date will loom very big on the horizon.

UEC claims it has 3,000 "essentially completed" receivers sitting on the shelves in South Africa, but with recent sales to Greece and Oman any quantity larger than 1,000 receivers in an initial release seems difficult. UEC in the best case would deliver receivers late in April to Australia.

Comstream reportedly has a more difficult problem. The UEC receiver (the model 642, a review of which will appear in SatFACTS for March 15) is a fourth generation product (the Panasat 520, 630, and 635 all preceded it) whereas the Comstream unit is essentially brand new. Ironically, it appears this receiver has been designed around the older Panasat (now UEC) 630 technology. That Comstream can produce receivers from "scratch" in anything less than 90 days is optimistic which makes the June 1st Aurora much postponed start date even more suspect in the Comstream case.

Optus in a release dated February 23 addressed to "Dear Dealer" advised over National Media Sales Manager Jeff Davies' signature, "*Optus expects there to be three or four approved decoders eventually, maximising the choice available for consumers and dealers alike, and encouraging quality, price and feature competition amongst manufacturers.*" This Optus approach gets good reviews from prospective equipment dealers even if their performance to date has been lacking. Optus is pointedly aware that if Telstra + PanAmSat + Scientific Atlanta win this tussle, the dealers and consumers will have *no choice but* the SA version receiver, and no opportunity to make their DTH systems multi-functional to include the national pay service provider (Australis/Galaxy at the moment). Optus has responded to the reports and concerns, to CTD, in the letter shown on page 12.

Still - There are Design Problems

Optus is actually pushing the outer walls of present day software technology with their demands for an IRD that does multiple functions. The February 23rd Davies letter listed 13 "aspects of Aurora" which Optus believed demonstrations conducted during the Sydney Cable & Satellite show proved. In that list, Optus claims four separate receiver brands and models were shown with the capacity of teletext. In fact, the teletext demonstrations and closed caption were not viable on two of the IRDs demonstrated.

The reality was that while the Optus demonstration might have been impressive to lay people wandering by the display booth, software glitches still prevent a number of the features Optus is claiming from being viable. No single receiver model did all of the features Optus now claims and it is questionable that even the four receiver models *combined* did all 13 as reported.

This level of exaggeration unfortunately pours gasoline on the fires which Scientific Atlanta is busily fanning and creates credibility problems for the already wounded Aurora project. There is no question that given enough time and sufficient resources, Aurora can deliver on all of their system design points (see table below). There is serious concern, even from Optus supporters, that the HACBSS digital conversion project can wait around while Optus sorts through the remaining unresolved engineering challenges.

On a scale of comparison between the yet to start Optus Aurora project and the problems besetting Pay TV providers Australis, Foxtel and Optus Cable, Aurora is in good shape. Unfortunately for Optus, very little of their present house is in order and primary competitor Telstra is wasting no time capitalising on Optus failures to produce to the schedule Optus originally announced. The next 90 days are crucial to

The "13 Features" Which Optus Targets for HACBSS Implementation

- 1) Multiple TV channel capability (5 working channels demonstrated at Sydney)
- 2) Live reception via small TVRO (show reception on 1m dish)
- 3) Multiple radio channel capability (2 demonstrated)
- 4) DVB Compliance of Aurora (a statement guaranteed to start a fight between engineers, since the Divicom multiplex appears itself to *not* be DVB compliant!)
- 5) DVB SI tables demonstration and Electronic Program Guide for TV & Radio
- 6) Teletext transmission and reception (Sky channel with Teletext; receivers from PACE and Sun Moon Star failed to properly do teletext or closed captioning while UEC and Comstream [Panasonic] *did*)
- 7) Closed caption transmission and reception via domestic IRDs
- 8) Compatible enhanced TV (EDTV, 16:9 aspect ratio) and SDTV (4:3) reception (show observers were impressed with the 16:9 display on a Philips TV receiver, driven by the Comstream [Panasonic] receiver)
- 9) Simple multiple TV network reception via one antenna and IRD (switching between Aurora and Galaxy Pay TV with 2 buttons on remote control)
- 10) Dual polarity multiple IRD feeds from one TVRO (antenna)
- 11) Reception of Aurora via multiple brands of IRDs (4 brands shown working, although the Pace and Sun Moon Star receivers lacked several Aurora software refinements)
- 12) Common Set Up menus and EPGs of different brands of IRDs
- 13) Satellite backhaul of Aurora from remote locations via SCPC (from Darwin)

Response to CTD from Jeff Davies, Sales Manager-National Media for Optus

(February 26, 1998)

"Let me state categorically that the ABC and SBS have firm and legally binding five year contracts with five (ABC) and two (SBS) HACBSS services as follows: (1) ABC SE (NSW/Vic), ABC NE (Qld), ABC NT, ABC SA, ABC WA and (2) SBS SE (NSW/Vic), SBS NE (Qld).

"As you know, Telstra/Scientific Atlanta are providing a low cost GWN service in WA, and with it, are supplying a low grade ABC service at no charge and without the ABC's agreement. The situation regarding SBS in WA is unclear, although an SBS WA signal of unknown quality does appear to be available on the Telstra platform. The commercial aspects of any contractual agreement that may exist, or being negotiated, between SBS and Telstra/SA is not known. An Imparja signal has also been on the Telstra platform but this is understood to be a low quality test service that is also provided at no charge to Imparja (1).

"Imparja Television has not yet made an announcement regarding its move to a digital system.

"Regarding any moves to PanAmSat (from Optus), I have spoken with the person responsible for the ABC's contracts (Mr. Ian McGarrity) and he is unequivocal in his denial of the statement attributed to Scientific Atlanta (i.e., that ABC will announce cancellation of the Optus contract by mid-March). I have (also) spoken to the person responsible for the SBS contracts, Ms. Maureen Crowe, and she has said that this scurrilous rumour is completely without foundation.

"Optus will announce two major new Aurora contracts in the next few days (Imparja is one-ed), both of which have been formally executed. Optus has also now formally executed a 3 year full-time service contract with Westlink, the WA government's distance education service, which will be complemented by the provision of the Horizon education channel from the Optus Pay TV suite.

"I can only think the issue of 'uncertainty' regarding the availability of IRDs for the Aurora system is wishful thinking on behalf of SA/Telstra/PanAmSat. Optus has executed a binding agreement with Irdeto to supply their conditional access system, making the Aurora platform technically compatible with the satellite Pay TV system used in Australia. If an appropriate commercial arrangement was put in place, there is no reason at all why the Australis/East Coast/Austar Pay TV signals could not be received by Aurora IRDs (other than the obvious matter of antenna size selection).

"Optus has not formally announced the recommended domestic IRD as we are concerned to ensure there is a ready supply of *working* decoders available in the field, *before* the transition begins. It seems that having reliable decoders and a system that is functioning properly was not at the top of the priority list for other system providers/broadcasters in the industry who do not seem to be at all concerned with the interests of consumers they are supposed to serve (2). Reports from WA indicate a far from satisfactory conversion to digital from the consumer's perspective.

"On the issue of a smart card or not, it is important to remember that the DVB specification **mandates** the use of a smart card. Once again SA/Telstra seem to be promoting a proprietary system in their own self interests and contrary to Australian and international standards. We fail to see how that will provide benefits to anyone other than SA/Telstra. Optus further believes that the use of a smart card *enhances* its already rugged Irdeto security system, as it adds yet another potential counter measure layer in the unlikely event of a security breach.

"Finally, this update: We expect to begin transitions to Aurora around the end of May 1998."

1/ *Corallie Ferguson*, Chief Executive Officer for Imparja Television told SatFACTS Monthly,

"The Imparja service now on PanAmSat (PowerVu, CA) is there without our agreement or contract. We understand Telstra is shipping this to oil rigs off the north shore of Australia under contract. We receive no revenue from this, and are not a party to this distribution."

2/ Those who are authorised to install SA D9234 receivers in WA for the GWN service are very reluctant to discuss their problems out of fear of losing the SA contract. CTD/SatFACTS has *not* been able to quantify the extent of installation and conditional access implementation problems with the GWN service but continue to investigate in this area.

IRD Box Score / March 1998

Integrated Receiver Decoder (IRD) units pricing as monitored by sister publication SatFACTS Monthly from industry sources. Based upon most recent reported bulk shipment sales or offers:
OPAC (Australia): Korean built FTA consumer version receiver, features detailed in SatFACTS

March 15th at landed in Australia price of US\$250.

Palcom DVB-1000R consumer version FTA receiver (post-April availability) with host of consumer features covering Msym 1-45. Distributor pricing in range of US\$250 in container load quantity (1,100).

Panasat/UEC Model 642: Irdeto CAM equipped, Msym 1-45, compatible with FTA and (Galaxy) pay TV services in 300+ quantity pricing region of US\$450.

Scientific Atlanta: Model 9234 consumer version PowerVu intended for Australian, PNG use. Distributor pricing in range of US\$950 in quantities of 500 or more.

Aurora and to parent Optus. Any further slippage which results in Aurora being set back beyond their present "midyear 1998" target will encourage the Telstra triumvirate to further pressure ABC, SBS and other Aurora signed users to abandon Optus. Where that takes the satellite industry in Australia is abundantly clear; straight into the PanAmSat and Scientific Atlanta camp. The repercussions of this will be with us short term in the rationalisation of the Pay TV industry in Australia. If Australis/Galaxy end up being the only user of Irdeto technology in Australia, the likelihood that the besieged Galaxy camp can survive becomes very small indeed. All eyes and ears will be tuned to the Irdeto certification tests that get underway in Holland March 9th.

Thumbnail Status of Australis/Galaxy at Presstime

Law suits continue to dominate the ongoing saga of DTH and MDS Pay TV provider Australis/Galaxy. The most important news is the service remains on the air, continues to produce a monthly programme guide for subscribers, and while there may be chaos in the executive suites, the programming package remains stable and attractive to Australian viewers.

The only positive legal decision during the past month has been a decision allowing Australis to reopen negotiations with Optus Communications which could, if completed, result in some level of merger between the two firms. Optus was offering a sharing of operational and programming infrastructure in a joint satellite venture, which Australis believed could save the firm A\$25 million per year. The original negotiations were stopped when Foxtel obtained a court order preventing further negotiations, Foxtel claiming such an agreement would violate a programme supply agreement between Foxtel and Australis.

In more negative (for Australis) activity, Packer's PBL has brought Supreme Court suit against Australis charging Australis bonds sold in December (US\$27m) contravenes a May 1996 deed which was issued to PBL over certain assets of Australis. The PBL deed referenced is the somewhat controversial agreement granting to PBL of first and last rights on all Australis assets. At that time, PBL organised a (A)\$200 million "rescue package" for Australis. Preliminary hearings are scheduled for March 13 where PBL will ask for an injunction to stop Australis from granting further security that in anyway jeopardises the PBL deed.

Meanwhile Australis has been attempting to find long term funding in the US to untangle its very complicated and often questioned debt status. With PBL attacking Australis on the Australian front, News Corp continues to seek United States court redress for what it alleges was "inadequate advance notice by Australis on the issuance of the December notes."

Australis in response to the PBL action issued a statement which says, "The action could be seen to be a part of a campaign by PBL to destabilise the company during sensitive negotiations in the US aimed at securing long term funding for the company." Australis is attempting to raise (A)\$100 million additional funding "to keep the company afloat" until the service's own cash flow turns positive.

Finally, Foxtel claimed (February 27) to have secured direct access to Hollywood films provided Australis can either be shown insolvent or Foxtel is able to break its contract with Australis.

TECHNOLOGY BYTES

...BITS and BYTES you may have missed in the rush to make a dollar ...

March 4, 1998 ♦ VOLUME 98-2-45

Satellite TV & Radio

Sports Pacific Network began test of programming January 31 using MPEG-2 digital delivery on SCPC through Intelsat 180 (4081.05 MHz, RHC, Msym 4.730 and FEC 3/4). Initial week of programming was timed to commemorate the 30th birthday of host country Nauru, a small island nation located virtually on the equator essentially due north of New Zealand. SPN is backed with funds by the Government of Nauru and strives to be a totally free to air, advertising supported "sports and culture" television service which will "bring the Pacific Islands together into a single community." As reported in SatFACTS Monthly (February 15; p. 6), the service operated for one initial week and then shut down to resume regular telecasting on February 21. The SCPC Intelsat 180 signal level is relatively low in level and in most portions of the Pacific a 3.7m dish is a minimum for reliable reception. Intelsat recommends a 6.1m dish for "serious reception with adequate margin to protect against signal variations." The primary users of the service at this time are television stations (Guam, Cooks, Western Samoa et al) and cable systems (Australia, New Zealand, Papua New Guinea). UHF television stations in New Zealand are being granted permission to take the SPN feed for rebroadcast in regional New Zealand centres; a total of ten commercial minutes per hour is scheduled with 6 of those minutes reserved for commercials originating with SPN and the remaining four available for local broadcast or cable outlets to sell locally. SPN promotes itself as a free to air "all Pacific network" and programming as CTD goes to press includes basketball from Guam, sailing races from Samoa, horse racing from Australia, boxing from several Pacific venues and a small amount of USA and European sport programming. TVNZ, by the way, reportedly has refused permission for television station in Cooks to utilise their existing 10m antenna, on which they receive TV1 news and sports feeds, for SPN resulting in the Cooks station purchasing their own second dish for I180 to take the SPN service. Shame on TVNZ!

RCTI, Indonesia service seen on Palapa C1 satellite at 150.5E (990 IF, horizontal) has again disappeared. The Indonesian television industry is increasingly showing signs of the economic and political turmoil in that country, stations routinely seen previously on Palapa C2 have reduced their operating hours and dependable services such as TPI (1070 Hz and 970 Vt) has been missing from the satellite for 8 to 12 hours at a time.

Irdeto and Australis. When Australis/Galaxy signed up to utilise the then new Irdeto conditional access system with their pay TV DTH service in Australia more than three years ago, it was agreed that no other television programmer could or would utilise Irdeto in Australia without the agreement of Australis. This, in effect, prevented a second service from coming into operation and building upon the already installed Australis DTH subscriber base, by offering competitive pay TV programming to the same receivers in Australia. There is an "Ooops" here for Optus which wants to purposefully utilise the Irdeto CA system for its Aurora project (see p. 8, here). To be allowed use of Irdeto, Optus had to convince Australis there were benefits to the pay TV firm to "sign off" that exclusive agreement with Irdeto. Faced with Optus needing such permission very badly, and Australis needing support from Optus in one form or another, an 11th hour agreement was reached just days prior to the Sydney Cable & Satellite show (at 2AM on the 19th of January the last required signature was added to the new agreement). Pretty gutsy of Optus to be promoting their Aurora project for more than six months, built around a conditional access system which they had not nailed down and knowing that the longer it took to put into a legal document, the "more they would pay" for that right!

How successful department. South African based Multichoice now claims 120,000 digital subscribers within South Africa, another 40,000 elsewhere on continent. Reflecting on slow consumer acceptance level after nearly 3 years of operation, executive told Multi-Channel News, "I think we underestimated the impact that the box price would have as a barrier to entry, so the digital growth has not been what we hoped for." The "box" in this case is the IRD that goes into the home (see CTD January, p. 2).

PanAmSat delaying launch of Indian Ocean PAS-7 to 4th quarter of this year, possibly October. No word on whether PAS-8 (Pacific Ocean Region) will also be delayed (scheduled last half of this year).

Hallmark. AsiaSat 2 service, buried inside of ZakNet (Internet) delivery package and uplinked from Subic Bay (Philippines) has always been troublesome "free to air" service. Of late, only Hyundai version 2.05 and Nokia version e3 commonly available IRDs would process the service and in case of Nokia, only when PIDs were manually entered through red screen menu (32, 33, 32). Now come reports that Hyundai 2.05 has ceased to process the service which is a clue that data stream for Hallmark has been modified to ask decoder "Do you have a conditional access module?" Hyundai receiver in response to question in data stream responds "no" and as a result Hallmark service is denied. In case of Nokia, software inside receiver automatically answers this question "yes" whether receiver has conditional access module or not in place. Net result - Hyundai 2.05 no longer does Hallmark, Nokia does if set up properly. (One report claims at least one version of the Nokia e3 software now automatically loads the Hallmark [plus KIBC] services without red screen menu intervention; the beat goes on.). Bottom line: If your Hyundai or Nokia have not recently worked on Hallmark, try again - now!

KIBC, bouquet companion to Hallmark, finally began regular programming on AsiaSat 2 at 0500UTC February 18th. The programming is perhaps appealing to the target audience (Filipino ex-pats living and working away from the Philippines) but there is very little of interest to others. The production qualities are quite amateurish, the service involves mostly "talking heads" and while the information imparted may be useful to the intended audience, the viewer appeal is not high at this point.

Exxtasy service. The Canadian based firm is undergoing a change in ownership and with that new management. All previous distribution contracts have been cancelled and new "deals" are being negotiated, in particular out of Australia for the Australian and Pacific region. The Exxtasy saga has been one of considerable confusion, less than accurate information, and deliberate misstatements of fact from the tentative launch of the service last June (see SatFACTS Monthly, July 15, 1997). To date, *no* subscribers have been authorised anywhere in the Pacific, and *no* IRDs equipped with Exxtasy conditional access "smart cards" have been seen nor demonstrated. That the service (currently two channels of triple X rated adult movies) is actually contained in the Intelsat I177E Ku band beam to Australia is unquestioned; receivers will load (if not display) the service. As reported in SatFACTS for January 19 (1998), the signal level into New Zealand from this service is now reduced by nearly 5 dB from levels measured as late as October, and SatFACTS had advised from tests conducted on North Island the service could not be accessed (even with the proper IRD and smart card) with a dish any smaller than 4.5 to 6 metres. Now comes the report that a South Island (New Zealand) system installer at Te Anu (far south-western corner of South Island) has found the base service locks and plays on a 1.8m (less than high quality) dish and a Sky home DTH grade LNBF. The surprise here is that the Intelsat 177E Ku signal coverage varies so significantly between the northern tip of North Island (where a 6m dish is required) and the south-west tip of South Island where perhaps a 1.5m dish would function. There is one free to air programme channel in this bouquet which acts as a "test card" for those who wish to investigate their own reception capabilities of this package; programme channel 301 from Thailand is FTA.

Spice Entertainment, two years ago preparing to launch a Pacific adult movie service, has been acquired by Playboy. Both firms have comparable subscriber numbers through cable and DTH distribution in North America (each in 22 million range). Playboy has shown "modest interest" in distributing their product in Pacific recently, but not via satellite (only via taped distribution).

A sex channel service for India, perhaps also to be available beyond India on Palapa C2, Plus 21 plans 7 hours daily starting at around 5AM NZST. The service has attracted significant opposition in India and the probability that the service will get on the air and be allowed to operate without intervention by Indian authorities is small. The Palapa C2 feed is slated for horizontal transponder 3,800 and a one hour FTA preview period followed by an analogue encrypted transmission is scheduled. Indian cable operators are being asked to purchase a minimum of 160 (analogue) decoders to qualify to carry the service with a suggested monthly fee equal to US\$2.54/ Rs100 (down scaled obviously for the low income Indian market). The Indian group planning to market the service there is Global Internet Ltd (GIL).

Latest gee whiz FTA digital IRD to hit the market is MediaStar D7 distributed by Opac Pty Limited (61-2-9584-1233) and in New Zealand Telsat Communications (tel 64-6-356-2749). Preliminary testing by SatFACTS Monthly (to be published March 15th) suggests receiver has solved several prior IRD "problems" but adds a few of its own to the mix. The receiver is user friendly when taken from the shipping carton, has been preloaded with parameters required to access digital services on multiple satellites (C and Ku) and moves smoothly from service to service on the same satellite. Changing satellites is slightly slower but still acceptable. Of note: The D7 does acceptable service from programmers such as Sky News London (AsiaSat 2) and NTSC based packages

although with a retarded in time audio to video (which means you should not look closely at the speaker's lips if you are following the audio material because it is delayed). Pricing on receiver seems volatile at CTD press time, typically under A\$995 at retail level including taxes as applicable in Australia. Receiver reportedly is manufactured in Korea, is likely to have multiple distributor sources shortly through different "trade names" from each distributor. Master distributor is OPAC which is offering dealers significant discounts when a full pallet (42 units) are purchased at a time.

Yuri YDR-100. This is a built-by-Hyundai, distributed through Singapore, look and operate like HSS-100C IRD. The software version reported is the 2.05 (which was thought to be the earliest Hyundai software distributed) and the pricing reported has been in the region of US\$300; significantly lower than the Hyundai models. It now appears the YDR-100 can be upgraded to at least the version 2.26 Hyundai software for improved performance, but unfortunately the receiver is no longer being distributed through Singapore and this means there is no after sale service possible. Of interest, Indonesian DTH dealers are offering this receiver at US\$800 which suggests significant mark-ups along the way.

Hyundai version 2.27. This is a version now being offered by an Australian firm and CTD has learned from Hyundai that the software (2.27) is not from Hyundai and they disavow any approval or support for this version. Hyundai says the last 2 "series" software they have released is 2.26. The 2.27 version receivers are being promoted as resolving audio and NTSC conversion glitches previously found with the 2.26 version, as well as adding (they claim) Hallmark reception as well (the Hallmark report was prior to the recent change in the data stream for this service; see prior report). You can determine if the 2.27 version is "old Hyundai" modified with new software by asking about the built-in modulator for UHF display of the satellite services; it may not be adjustable (in channel) or have the proper 5.5MHz offset audio for PAL system use.

Hyundai version 5.0. It is now official from Hyundai that the 5.0 version receivers *do* have a tuner sensitivity problem. As reported for January (1981, p. 18-19), the 5.0 version introduced significantly better performing software while at the same time substituting a totally new tuner section. The tuner is less sensitive than the earlier Nokia units used and as a result the 5.0 version unit created unhappy consumers who could not access services previously available on older version Hyundai units. CTD has been told 150 of the version 5.0 units were actually distributed in Australia and New Zealand, and where the user has a sizeable dish the lack of tuner sensitivity is not noticed. For marginal systems using the smallest practical dish, the lack of tuner sensitivity has been a problem. Hyundai is backing up the product by providing replacement units to the distributors handling the 5.0; the replacements return to the original Nokia brand tuners and make software adaptations to the 5.0 to allow use of this tuner.

Leon Senior, manager for the satellite division at Skandia Electronics in Melbourne, has left the firm and is establishing his own distribution house called Satellite Communications Technology Pty Ltd (Satech). Senior tells CTD, "We will offer Hyundai, Paracclipse, Strong and other lines of products to satellite dealers and will concentrate on being a good support firm for dealers who need special assistance." How Senior's new company will impact the Skandia product line-up is not known. Senior relates, "We will be offering the 2.26 version of the Hyundai, equipped with the original Nokia tuner. These have been excellent performing units with several thousand now in use and no power supply failures."

SPRSCS '98 (South Pacific Region Satellite & Cable Show) convened February 17-22 at Doubtless Bay Cable TV in New Zealand's Far North. New MPEG DVB compliant satellite receivers from UEC (Panasat, model 642), from Benjamin and MediaStar (D7) were tested and seen for first time by attendees. World class technology instructor Mark Long's two courses (Digital TV Fundamentals, Advanced Satellite Installation Techniques) attracted attendees from extreme western Australia to Tahiti with 70% of those attending the digital fundamentals course qualifying for certificates by passing their exams at the show proper. Attendees also had extensive two-day course in cable TV and SMATV fundamentals with attendee Horst Wiser from Germany providing excellent practical examples of the European experience to date with distributing L-band (950-2,150 MHz) satellite signals throughout home and commercial buildings. Attendees also spent half day retrofitting some of the cable TV system dishes with new feeds and comparing techniques involved in gaining maximum performance from dish installations.

MediaNet update. As reported in CTD for August, October and November 1997 (97-07, 97-08 and 97-09), the delivery of Internet via satellite has been a non-event after promises of low cost hardware and user friendly software early in 1997. The MediaNet service is distributed under agreement on Deutsche Welle's MPEG-2 bouquet package on AsiaSat 2 but has never been successfully launched as a commercial service. As we have previously reported, the German MediaNet service has been a total failure in the Pacific and Asia primarily because no suitable IRDs have appeared to decode and display the product. Add to this new significant financial problems with the MediaNet firm

in Germany, as reported in German newspapers late in February. The story relates, "The Vogt Corporation (holder of MediaNet) has been fighting an apparently not solvable problem. Since 1997, Vogt has produced a decoder which allows satellite transmitted Internet signals (Deutsche Welle) to be received and displayed on a PC. There are reportedly 40,000 of these set-top decoders in warehouses (in Germany). The service provider, MediaNet, that is responsible for organising the subscription service (to Internet) has financial difficulties of its own and 8 million marks are at stake. The Vogt Corporation is now negotiating with MediaNet to find a solution which may eventually involve Vogt taking a stake in MediaNet." The set-top decoder referenced is only a part of the solution for Pacific use of the MediaNet service on Deutsche Welle. Before the decoder can be used, the satellite receiver must also be compatible with processing the MediaNet service to the set-top box. A prototype Nokia receiver with what MediaNet hopes is the correct circuitry built in is now being tested in Auckland. Even if it works, there are cost considerations still to be overcome. The original plan was to charge around NZ\$20 per month for the service but because the service is only a "slice" of the full Internet, and is only one-way (as in teletext systems), the competitive posture of such a system in a universe with rapidly growing high speed full Internet delivery via direct satellite connections is in question.

AsiaSat's formal decision as to their precise plans for replacing defective As3 are not announced at our presstime and rumours widely circulated throughout Asia claim the "likely announcement" will involve AsiaSat locating an existing satellite already in orbit (elsewhere) which could be moved to 105.5E as a temporary vehicle while a full replacement is being built. On the Hong Kong stock market, AsiaSat shares have dropped 20% since the launch failure and are down 45% from their high of \$24.45 last July 26.

Rupert Murdoch's News Corp has entered into an agreement with South Korea's Dacom Satellite Multimedia System to partner a satellite broadcasting service. Dacom, a Korean telecommunications firm, is the major pre-launch customer for the Orion 3 satellite scheduled for deployment in October. Dacom had originally planned to operate the Orion Ku band assignment for direct to home television and Internet delivery. However, South Korea's economy, like virtually all of Asia, has been under pressure and possibly bringing News Corp into the picture is a result of Dacom no longer being in a position to fund the plan alone.

Space debris. Two Russian MIR astronauts appeared February 7th on American home shopping network, QVC, to "sell" space suits, other artefacts. Unique live feed from MIR was intended to raise funds for Russian space programme by offering viewers opportunity to "bid" on items shown live from space. Delivery will be after next docking and return to earth of Astronauts, not "direct to home" by the overflying space station.

Correction: Telephone numbers given SatFACTS February 15th for Indovision should have read: Tech help at 62-2-522-2793; sales at 62-2-526-9988. Our apology for the country code error!

Digital TV & Radio

Extensive study of US TV broadcast station owners reports 93% of US stations will have digital television transmissions on the air before the end of 2002. Of those, 33% said they would use digital TV channel assignments to transmit multiplex (more than one programme channel simultaneously), 23% said they would use spectrum exclusively for HDTV while balance (44%) admitted to have not made that decision yet. Overwhelming 76% believe that the price of consumer DTV receivers will be most important factor in consumer acceptance of digital.

"**From \$5,00 to infinity**" is best "guesstimate" of consumer pricing for first run of DTV television receivers scheduled to hit (US) consumer marketplace later this year. Annual CES (Consumer Electronic Show), which drew record breaking 91,000 attendees, was significantly interested in (1) when? and (2) how much? of the new transitional receivers. First models from major makers will include existing analogue plus new digital reception capabilities. Breaking pricing rank, Thomson is forecasting US\$3,000 price tag for 34W and 38W direct view HDTV receivers "before end of 1999."

Digital Television (DTV) capacity to transmit improved quality of teletext for purposes of closed captioning (as aid to those hard of hearing or with English language problems) in US is "untested and unproven" according to National Centre for Accessible Media. Perhaps overlooked in rush to get DTV up and running in US, little used (except for closed captioning) teletext technology in world's wealthiest television market appears to have been "forgotten."

United States DirecTV (DTH) will launch two channels of HDTV by September-October. Move changes rules for introduction of HDTV in US since previous plans had concentrated on HDTV being available in 10 cities through 23 early HDTV broadcasters starting in November. Now with HDTV service to be on satellite, distribution of HDTV receivers and the necessary support for these receivers must cover entire USA simultaneously. Two channels will include sports and movies (2nd channel). Early January demonstration of new service using 46cm dish was mostly

successful. Prior to DTH announcement of HDTV, US TV industry was wildly forecasting not fewer than 20,000 nor more than 100,000 HDTV sets would be sold in first 12 months of HDTV operations. This was based upon very limited availability of services in only ten US cities at start. Most TV set makers had planned HDTV initial sets would be large and very large screen models intended for public places (bars, clubs) where maximum viewing audiences could be attracted to new service. Many believe the early years will be more of a "show and tell" than a "show and sell" exercise. Even in the ten markets where HDTV will be on the terrestrial airwaves by November, the hours of programming available per day will be typically under six total. The DTH service from DirecTV plans 24 hours from the start, which combined with its national coverage, makes it the ideal "show, tell and then sell" tool according to US equipment suppliers. DirecTV will lease Ku band transponder capacity on Galaxy IIIR to add HDTV and new ethnic programming for North America. Consumers will require second dish to add the new services, or will replace their existing 45cm antenna with a 21 x 35" offset (elliptical) antenna surface capable of supplying reception from two satellites 6 degrees apart in the sky. Satellite DTH competitor Echostar said it is still studying plans for HDTV distribution, believes it will transmit HDTV from satellites at 61.5 and 148W at 7 Mbytes per second, use "line doubling" technique in IRD to create HDTV image from previously compressed EDTV transmitted image.

Consumer Electronics

Surprise announcement from major TV set producer Mitsubishi. They will drop all production of direct view (as opposed to projection) TV sets and concentrate on plasma flat-panel display (PFP) receivers (still something of a very high end priced curiosity) and projection TVs. The announcement left room for the company to also drop out of analogue TV production at an early date in favour of the newer digital receivers. Mitsubishi analogue receivers are expected to run out by the end of June. 42" PFP sets are presently available, 46" are scheduled later this year, 55" in 1999.

World's second largest computer company will be end result of Compaq purchase of Digital Equipment Corporation for reported US\$9.6 billion in cash and stock. Merger should produce annual sales in region of \$37 billion. DEC recently predicted existing 333 MHz speed processor chips found in latest PCs will be superseded by 1 GHz speed chips "before 2000." A similar project at IBM, the world's largest computer firm, is reported to have a laboratory working 1 GHz processing chip at this time.

Sony has displayed new technology for VCR users; an "electronic" adhesive back label for video cassettes which automatically tells the user the name, duration of recording and time left unused on a tape. SmartFile system has memory chip on label for cassette that creates storage of tape's use to date; user positions cassette in front of VCR and on screen readout reveals contents and duration of events on tape. System will function with newly announced 2 head hi-fi VCRs with tentative US\$449/499 price tags.

"NightShot" camcorders by Sony are latest gee whiz toys. Priced from US\$799 to \$1,399, the infrared sensitive camcorders make possible recording in "total darkness" (they claim, if you are in pitch black room and could not see your hand in front of your face, the camcorder will allow you to read text from 3 metres distance).

First there was flat wall hanging TV displays, now there will be flat wall hanging speakers. New product line from NEC subsidiary Authentic Ltd. is apparently covered by patents in UK held by NXT Ltd.

AutoPC is latest innovation from Microsoft. Package is dashboard mounted, voice activated car computer allowing user to receive e-mail and other text through cellular telephone and have text of messages translated by voice synthesiser so car driver can "hear" content of text formats without reading it or taking eyes off of the road. US automakers are planning similar system in year 2000 auto models; first after market unit is being built under license by Clarion, has US\$1,000 price tag.

DVD industry in US is preparing for introduction of Circuit City (chain of retail outlets) introduction of proprietary DVD discs which have unique ability to be used as "pay per view" product. DIVX involves proprietary player (prototypes done by LG Electronics - Zenith, production models from Panasonic, Thomson, JVC and Pioneer) which ties to telephone line through modem. DIVX discs, containing full movies or other material, will "sell" (not rent) at dealer shops for typically (US)\$4.50. User when ready to view disc calls toll free number and uses credit card to obtain "operation" of disc. The disc is then modem activated and user has 48 hours of unlimited viewing of the disc starting when "play" button is pushed. After 48 hours, viewer can reactivate the same disc by calling the same number, and paying additional \$3 for second 48 hour viewing period. DIVX (video CD) discs can be paused, stopped, and otherwise operated in normal manner without affecting the 48 hour play period. Consumers who elect not to save the discs in library form can return them for recycling and a credit against the basic disc material (but not the content). Circuit City marketing is based upon theory that a retail shop presently purchases a single VHS copy of

a movie and rents it typically up to 50 times during the "lifetime" of the film. They believe that with DIVX, rather than renting discs, consumers will opt to pay \$4.50 and avoid the requirement to return a specific VHS tape to a store before a deadline to not incur late return penalties. (Web site is www.divx.com)

Top five DVD discs in first calendar year of sales: (1) Batman & Robin (91,521 copies), (2) Twister (86,840), (3) Eraser (79,806), (4) Blade Runner (64,701) and (5) The Fugitive (61,093). Studios realised US\$50.6 million in revenues from first partial year of disc sales and sold total of more than 3 million discs (averaging nearly \$17 per disc to the studios). The only major (US) studio that has not allowed its library or current releases to go out in the DVD format is Fox.

Airforce One movie hit of 1997 is being released on DVD with 112,000 pre-release orders, making it first DVD (movie disc) to go over 100,000 sales prior to release. Advertised retail price is US\$24.95.

VHS movie rental dropped 5% in US during 1997, video sell-through sales 6%. Top VHS seller was Men In Black and number two was Disney Bambi.

Microsoft is predicting that by year 2000, the only type of "drives" available in home PCs will be DVD. Presently DVD-ROM drives are an almost unmeasurable percentage of drives but the computer industry projects 15 million will be sold in 1998, rising sharply to 50 million in 1999.

Direct view colour TV sets in USA slid to 1992 sales levels during 1997, after posting record high in 1994. Declines are attributed to rise of projection TV sets (up 4% from 1996) and consumer attitudes about rapid approach of digital. DVD players rang in at 350,000, while laserdiscs were below 50,000 for year, first year to be below 100,00 since 1991 start of industry.

DVD players, a selection of models and features, currently in stock at Outland in Melbourne (tel 61-3-9645-3411 or check www.madman.com.au/dvd).

Cable/Fibre/MMDS/Pay TV

Sky Networks Ltd has reported its first profit with an interim (NZ)\$487,000 net on an operating gross of \$126.3 million for the year ending December 31. 1996 end of year result was a loss of \$20.6m. Sky also reports an 18% increase in subscribers for the year (284,781 accounts including 12,182 analogue satellite subscribers). On the cost side of the ledger, operating costs rose \$21.9 million to \$125.8 million while programming costs rose 21% to \$76.8 million. In a parallel report, majority stockholder INL reported an increase in interest costs related to its Sky Network acquisition of NZ\$5.4m for the year end.

Sky has done a "soft" announcement of the status of their satellite analogue to digital conversion project. The business news section of New Zealand papers headlined their brief updates, "*Sky delays launch of digital service*" going on to explain the launch of digital "in April has been pushed back until the third quarter of this year." The news reports go on to quote Chief Executive Nate Smith announcing, "Shareholder changes and taking the company public have taken precedence. The existing owners didn't want to take on the liability of deciding a path so it was decided to wait until INL came in. Sky has reached an agreement with NDS to supply the security smart card system and digital compression equipment, and is deciding on a decoder supplier. The company is aiming to get up to 30 digital channels on air this year, leaving its planned interactive service until 1999 when its third transponder goes into service." That was the official (public) report, now what is behind the scenes? Sky's Board met on Wednesday February 18th and approved the staff's recommendation for purchasing a (Murdoch controlled) NDC (News Datacom) conditional access package which includes NDC designed and manufactured multiplex (uplink) equipment. The NDC selection should have not been a surprise since Murdoch controlled INL also "controls" the Sky operation. The Nate Smith statement that Sky plans to provide 30 digital programme channels in two transponders requires close examination. To "compress" 15 programme channels into each of the Optus 54 MHz wide Optus B1 transponders available will require technology that has yet to be demonstrated in the real world in an operating satellite delivery system. Galaxy, for example, manages to compress 11 programme channels into each of their two transponders and although compression techniques are improving monthly, there will be a plateau reached limiting the maximum number of programme channels per transponder at some point. As Scientific Atlanta has discovered with their PowerVu service presently in use for GWN and others on PAS-2 (see SatFACTS for March 15), when a video signal is compressed too much, the resolution of the video suffers significantly resulting in a low grade (security camera level) picture. This problem becomes more complicated with fast moving video scenes (such as one has with sport). Smith may be hoping or even praying that when they arrive at "the third quarter" the compression technology will have improved sufficiently to allow 15 programme channels to be delivered on each transponder, but neither he nor anyone else in the world could produce that level of compression today. What the news reports also did not touch is the status of the IRD or decoder units. Unannounced was a plan to call the IRDs

New Zealand is First to Auction Off LMDS Frequencies

Denver, Colorado based Formus International Ltd. paid NZ\$2.429 million for blocks of 28/29 GHz frequencies auctioned off over a two week period ending February 9th by the Ministry of Commerce. The so-called LMDS frequency blocks, 150 and 500 MHz in bandwidth, have possible application for digital data or television delivery using "cellular" technology only recently field tested in North America. Six frequency blocks were auctioned, Formus purchased 5 of these and Clear Communications Ltd. bid \$808,000 for the sixth (500 MHz bandwidth) block.

CTD reported (December 97-10, p. 11) the Ministry's plan to auction off these frequency blocks and suggested they were capable of providing a solution to the "last mile" technical problems faced by Telecom in New Zealand.

Meanwhile, US FCC is nearing final decision to auction off LMDS frequencies in USA. Experimental New York City pioneer LMDS operator CellularVision, which attracted very premature headlines in New Zealand more than three years ago, has elected not to be a system operator citing the high cost of the licenses under auction as a deterrent.

"World Receivers," a brand or model name you will not find listed anyplace. At the Sky staff level, the "World Receiver" is tagged as a (NZ)\$1,500 unit, significantly more than other conditional access receivers now on the market. By way of comparison, the Irdeto conditional access system equipped receivers now approaching certification testing for the Australian Aurora project (see p. 8 here) are believed to be in the region of US\$350 (NZ\$600). What is the "World Receiver?" Very probably it does not exist and is a subterfuge to hide the fact that Sky is still undecided as to the exact brand and model of receiver it will select. Equally, the staff level \$1,500 per IRD could also be a subterfuge designed to mislead anyone who might enquire as to the likely cost of the Sky IRDs. Elsewhere in the world, Murdoch DTH interests have recently been focusing on a possible IRD deal with US firm Zenith which has created what some consider to be "the next level of compression technology and companion decoders." Literature describing the Zenith system is found at Sky. Zenith, however, continues to suffer significant financial losses quarter to quarter and has just announced it is abandoning its cable-popular analogue set-top box production (Z-TAC and others). Sky's announcement that it will commence multiplex transmissions "in May" simply means it is possible, they believe, to have a new digital uplink transmitter equipped with an NDC supplied multiplexer in operation by May. The Optus transponder for digital first becomes available to Sky that month. The announcement that "(World Box) receivers will be available around September" is a good guesstimate but should not be taken as a statement of Sky's ability to launch a commercial digital service by September. If the Zenith system, for example, is selected, it's inherent NTSC origins will require some modification for PAL service in the Pacific. Additionally, there is a minimum lead time of 16 weeks on critical (one source) components that go into any new IRD design and only after the critical components are received can actual production begin. September, then, becomes a best case scenario provided Sky reaches an irreversible decision about the IRD supplier not later than mid April. Although Sky is attempting to keep all of this detail "under wraps," it is inevitable that leaks occur, especially involving overseas potential suppliers. And finally on that subject, word that "World Box" IRDs could cost as much as NZ\$1,500 has reached a consumer group that believes people who live in regions of the country where TVs 1 - 4 (terrestrial) are not received well should have something to say about IRD costs. A spokesman who declined to be directly quoted (or named at this time) for one such group told CTD, "We see no reason why people who only desire an opportunity to gain access to quality terrestrial TV reception should be forced by a Sky decision to use something they call the 'World Box' receiver and pay an outlandish price for that piece of equipment." The spokesman also told CTD, "We intend to raise a public outcry if the \$1,500 price now being talked about at Sky actually happens." Sky first announced carriage of terrestrial services within their digital bouquet last August, and talk back radio in New Zealand is likely to be filled with discussions on this matter in the months ahead.

Cable TV equipment by the container load is being disposed of by Napier based Ericsson Communications, former prime contractor to Telecom's First Media cable TV division that shut down new system construction in Auckland and Wellington last November (CTD 97-10, p. 8). Equipment includes drop and trunk cable, trenching equipment and a wide variety of electronics (contact Mark Harrison at 64-6-831-0200, extension 6874).

Another cable TV failure? Little noticed and not publicised effort to install cable television in North Island community of Masterton, by a North American investor group, languishes with inactivity. The cable TV firm has rented office space, installed two satellite dishes (one of which was subsequently destroyed by winds), and reportedly installed overhead steel strand (cable support) wire on approximately 20% of the power poles. CTD sources advise the cable firm paid NZ\$2 per metre to have the power company crews install the strand on poles, and

has an agreement to pay the power company \$1 per pole per year for rental of space for its cable and equipment. The project has been inactive for several months, and sources in Masterton advise the original North American backers are negotiating with a new group to take over and complete the system.

Sky has notified its analogue subscribers that effective April 1st, they will be paying \$4 per week for Sky Spot although Orange will "continue to be free." Sky is telling potential new subscribers they will pay \$650 for the Sky installation package plus \$4 a week. Sky is attempting to require satellite subscribers pay the new fees by direct bank debit rather than entering into an invoicing and cheque pay system.

Cable TV exclusive programming channels drew record 28.2 "share" of audience in prime time (evening) viewing hours during December in USA. Cable service inroads against major network and local programming has slowly increased point by point over last decade and sum of cable-only programming amongst 22 different programme services commonly available through cable now routinely exceeds viewers for all but the top-ten rated "network" programmes in USA.

Gisborne's cellular style cable television system, primary source for Sky Network programming in the community, now has approximately 200 12 GHz "cell sites" and is serving approximately 10% of the residential population. Similar cellular format cable system in Greymouth has 130 cell sites operating.

Telechannels Corp Ltd. CEO Bill Lee has been in New Zealand four weeks attempting to work out a sales plan for their two MMDS channels held here. Firm holds rights to 16 MHz of spectrum space on national (New Zealand) license, believes the ultimate users of their frequencies will be either digital compressed television or Internet delivery. Present level of compression technology would allow 5 TV channels into single 8 MHz wide channel at this time, possibly to as many as 8 TV channels when compression technology reaches mature plateau. Lee tells CTD present digital encoders are priced in range of US\$55,000 per programme channel, US\$550,000 for full use of two MMDS channels using 5:1 compression. Set-top MMDS decoder boxes range in price from US\$385 to US\$795 in multi-thousand quantities from suppliers such as General Instrument, Zenith, Scientific Atlanta and Thomson. Firm can be reached at tel (64) (0)9-520-0622 or fax (64) (0)9-529-1376.

With DTH (DBS) now established as healthy delivery medium in US, regulators are pressing for DTH operators to set aside some amount of their spectrum for use by "public interest programmers." Cable Act of 1992 created legal requirement that up to 7% of programme channel/spectrum space be used for non-commercial, educational television. Among questions to be settled, what constitutes this gender of programming, and who will select programmes to be transmitted. Present non-commercial television entity, PBS, plans midyear launch of multiple channels of free to air programming for DBS viewers.

UK's General Cable is abandoning cable TV-only offering and now sells itself as a telephony service company with cable TV available only as an option to homes or businesses using firm's telecommunication service. Company presently has 198,000 telephony customers versus 163,000 taking television alone or with telephony. Pricing on TV component is being reduced as optional add-on to telephony, company may ultimately convert TV bandwidth for carriage of terrestrial digital television on behalf of new British Interactive Broadcasting service scheduled to launch in 1999.

Consumers will receive up to US\$12m in credit because of a miscue in marketing by US DirecTV DTH service operator. Service had offered programming package with \$200 rebate offer that included Encore movie service, then shifted Encore to more expensive higher tier of channels after subscribers had signed on. Under pressure from 31 state Attorney Generals, DirecTV has agreed to compensate DBS subscribers at rate of US\$4 per subscriber per month (the adjudicated retail price of Encore) and to provide other compensation as well.

Malaysia's struggling monopoly DTH digital pay TV provider Astro is trying to increase its subscriber base by reducing the cost of installations. The original launch price for a DTH system was US\$377 plus US\$51.40 for the installation (US\$428.40 or approximately NZ\$750). The service uses Philips Irdeto equipped conditional access IRDs. Astro as of mid-February has 145,000 subscribers, has a goal of 500,000 by the end of this year in an economy which makes this very unlikely. The special pricing currently being offered is US\$200 for the IRD and antenna, US\$50 for the installation. Astro was providing an unknown subsidy initially, this is increased by the discount offer by more than US\$178. Company's www web site has disappeared; not a good sign.

Indian film industry executives are fighting a new level of piracy of their product involving the country's burgeoning cable TV industry. Films produced by "Bollywood" are now routinely being shown on cable TV systems before they can be released to theatres and the film execs are trying to close the security holes that allow this to happen. Indian cable has a tradition of "copying" new releases very shortly after the films first appear in theatres; now the cable "pirates" have moved a step closer to the film's sources.

Interactive, digital capable cable TV set-top boxes are currently priced "in the high 300s" according to Scientific Atlanta CEO James McDonald, "we expect them to drop nearer to (US)\$300 each late in 1999." SA has a backorder status of approximately one million Explorer 2000 set-tops, hopes to deliver up to 500,000 during this calendar year. The 2000 series product is considered an interim, first generation digital unit and includes the following features: (1) Built-in cable modem, (2) 54 MIPS Sun processor, (3) Internet protocols, (4) HTML, (5) Optional Ethernet interface, (6) JavaScript, (7) Open standards reverse-path transmitter, (8) PowerKey (SA proprietary) conditional access system, (9) Capacity to add additional interactive services without hardware replacement. SA's reported quarterly results (ending December, 1997) were up to US\$294.5 million from year ago \$282.2 million, profits up 10.7% to \$14.8 million (a 5% return on gross sales).

Terrestrial Broadcasting

Lawsuit scheduled for trial in Manila (Philippines) reportedly involves New Zealand company. Suit brought by AMA Computers Philippines Ltd. claims NZ firm with Canadian support sold exclusive right for one-way Internet software system to Filipino firm for a reported US\$8m. Suit alleges NZ firm did not own software rights to the system it sold, which was to deliver Web TV family of Internet through Filipino broadcast TV operations (see CTD October 1997, p. 4). CTD understands the system sold to the Filipino computer company was identical in form and substance to that proposed in New Zealand last May-June. AMA (computer firm) is Filipino's largest, 77 offices and annual sales in excess of US\$300m.

Sky has withdrawn a programme distribution plan which had been on offer to selected UHF independent television broadcasters throughout New Zealand. A quantity of programming originating on Sky Sport was offered to the UHF stations for a fee with the written agreement that before a UHF station broadcast any Sky programming, each programme was to be approved in advance by Sky. Somehow, a station in Nelson and another in Christchurch elected to broadcast, simulcast to the transmission on Sky Sport, tennis coverage. The agreement was originally intended to supply a secondary market (the UHF stations) with less general appeal programming (boxing and other non-mainline events). Had the stations followed their contracts and requested permission for the Sky transmitted tennis event, they would apparently have been denied access to the event. UHF affiliates of Sky were notified in writing of the "immediate cancellation" of the contracts in mid-February.

The distinction blurs. National Association of Broadcasters (NAB) in USA has taken first step towards all-industry supported plan to make the programming from 1,600 commercial TV stations in USA available market by market through satellite delivery. Project presently involves use of Ka band (20/30 GHz) satellites with hundreds of tiny "spot beams" which would individually reach homes in a 'DMA' (standard market area). US broadcasters have watched with interest and panic plans of Echostar (DTH operator) to launch later this year delivery of all TV stations in major markets back to market through use of Ku band satellites Echostar is currently activating. Echostar proposes to add second (46 cm) satellite dish and LNBF to homes in ten major population centres allowing those homes to receive satellite (digital) quality reception from not only 200 channel universe of "normal" satellite programming but local network and independent stations as well. Echostar President Charles Ergen believes the primary reason more homes in metropolitan regions do not subscribe to satellite services is the lack of local stations in same package (cable, satellite's prime competitor, routinely offers both local station service and satellite service); recent study of consumers who had shopped DBS but did not buy found 86% cited "lack of local TV station reception" as primary reason for not buying DBS. Broadcaster's Ka band plan is apparent attempt to improve their own signal delivery within their market areas, and with alliances outside of broadcasting, accomplish exactly what Echostar is setting out to do but at new Ka band frequency group rather than at Ku band. Ka band satellites are scheduled for launch sometime after 2002.

Long shot payoff. Executives at Fox Television in USA, now a serious contender to be the top rated TV network, told industry meeting the company was US\$300 million in red ink before turnaround came and they became profitable in day to day operations. Putting that in perspective, they reported, "The syndication of the 'Simpsons' series has produced more than \$300 million in revenues after the network run and there is no end in sight for this one programme's earnings."

OUR THANKS -

To the many hundreds of readers throughout the Pacific and Asia who have made CTD the industry's "best read" and "most timely" insider newsletter in this region of the world. Full subscription information appears at the bottom of our cover sheet, page one.

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March 2, 1998

Attention: Peter
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Good morning Peter,

Coop's Technology Digest for March to you via NZ Courier (E40.07658429.2) Monday for Tuesday arrival your shop.

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The covers for SatFACTS March should be in your hands Friday March 6th and the insides Tuesday March 10.

Best regards,

Bob Cooper

